WHAT IS CLAIMED IS:

1.  In a control box including at least one power supply and a control module having a power on management procedure and a power consumption estimation procedure, a method of managing power of the control box which, when powered on, causes the control module to perform the steps of:

(a) running the power on management procedure to set a power on mode of each of a plurality of blade servers installed in the control box;

(b) measuring power consumed by the blade servers running in the power on mode;

(c) measuring power of the power supply;

(d) running the power consumption estimation procedure to determine whether the power of the power supply is larger than the power consumed by the blade servers, and

(e) determining whether a subsequent action should be continued by the control module based on the estimation.

2.  The method of claim 1, further comprising the step of continuing the subsequent action if the power of the power supply is less than the power consumed by the blade servers as determined in the step (d).

3.  The method of claim 1, further comprising the steps of stopping the subsequent action and issuing a warning of insufficient power for the power on if the power of the power supply is less than the power consumed by the blade servers as determined in the step (d).

4.  The method of claim 1, wherein the control box further comprises at least one backup power supply and in response to determining that the power of the power supply is less than the power consumed by the blade servers, the control module performs the steps of:

12

(f) determining whether a backup power supply is currently disposed in the control box;

(g) running the power consumption estimation procedure to determine whether a total available power of the power supply and the backup power supply is larger than the power consumed by the blade servers in the power on if the determination in the step (f) is positive, and

(h) continuing the subsequent action if the total available power is larger than the power consumed by the blade servers as determined in the step (g).

5. The method of claim 4, further comprising the steps of stopping the subsequent action and issuing a warning of insufficient power for the power on if the total available power is less than the power consumed by the blade servers as determined in the step (g).

6. The method of claim 4, wherein in response to determining that the total available power is less than the power consumed by the blade servers, the control module, without the activation of the backup power supply, performs the steps of:

(i) running the power consumption estimation procedure to estimate an optimum power on condition including types of the blade servers to be activated and an optimum number of the blade servers to be activated;

(j) activating the blade servers estimated in the step (i), and

(k) informing a manager of the warning of insufficient power supplied by the power supply.

7. The method of claim 4, wherein in response to determining that the total available power is less than the power consumed by the blade servers, the control module, with the activation of the backup power supply, performs the steps of:

(l) running the power consumption estimation procedure to estimate an optimum power on condition including types of the blade servers to be activated and an optimum number of the blade servers to be activated by the total available power;

5      (m) activating the blade servers estimated in the step (l), and

(n) informing a manager of the warning of insufficient power supplied by the power supply and the backup power supply.

8.      The method of claim 1, wherein in response to finishing the power on, reside the control module in the control box for monitoring whether there is

10     an insertion of the blade servers into the control box or a removal of the same from the control box and an activation of the blade servers in a standby mode, and measuring the power consumed by the blade servers; and run the power consumption estimation procedure to determine whether the power consumed by the blade servers is larger than the total available

15     power so that the control module is operative to stop an addition of a new hardware, stop the subsequent process, and issue a warning of insufficient power for the power on to a manager's computer if the power consumed by the blade servers is larger than the total available power.

9.      The method of claim 1, wherein prior to determining whether the power

20     of the power supply is larger than the power consumed by the blade servers, the control module performs the steps of:

(o) activating the control module;

(p) running the power on management procedure and the power consumption estimation procedure to detect the blade servers in the control

25     box for measuring the power consumption of the blade servers operated in the power on mode, the power of the power supply, and the total available power of the power supply and the backup power supply;

(q) running the power consumption estimation procedure to compare the total available power with the power consumption of the blade servers in the power on;

(r) running the power consumption estimation procedure to estimate an optimum activation state based on the total available power if the total available power is less than the power consumption of the blade servers in the power on as determined in the step (q);

(s) activating the blade servers based on the optimum activation state prior to informing a manager of a warning of insufficient power.

10. The method of claim 1, wherein responsive to determining that the power of the power supply is larger than the power consumed by the blade servers, the control module continues the subsequent action, resides in the control box, monitors the control box, and performs the steps of:

(t) detecting whether there is an insertion of the blade servers of the same type or different types into the control box, an activation of the remaining blade servers, and a removal of the blade servers from the control box;

(u) measuring the power consumed by the blade servers, and

(v) running the power consumption estimation procedure to determine whether the power consumed by the blade servers is larger than the total available power so that the control module is operative to stop the subsequent process and issue a warning of insufficient power for the power on the power consumed by the blade servers is larger than the total available power.

11. The method of claim 1, wherein

the power consumption of each blade server in a full speed mode is $S_1$, $S_2$,..., or $S_n$,

the power consumption of each blade server in the standby mode is $S_1'$, $S_2', ..., $ or $S_n'$,

the number of each of the blade servers in the control box is $M_1$, $M_2, ...,$ or $M_n$,

5    the number of each of the blade servers in the full speed mode is $m_1$, $m_2, ...,$ or $m_n$,

the number of each of the blade servers in the standby mode is $M_1-m_1$, $M_2-m_2, ...,$ or $M_n-m_n$,

the number of the power supply is $C_1$,

10    the number of the backup power supply is $C_2$,

the power of each of the power supply is $P_1$,

the power of each of the backup power supply is $P_2$, and

the power consumption of the control module is E after the control box has finished the power on so that an equation approximately calculating the

15    power consumption in the power on is:

$$(P_1 \times C_1 + P_2 \times C_2) \geq (S_1 \times m_1) + (S_1' \times (M_1-m_1)) + (S_2 \times m_2) + (S_2' \times (M_2-m_2))$$

$$+ (S_3 \times m_3) + (S_3' \times (M_3-m_3)) \cdots + (S_n \times m_n) + (S_n' \times (M_n-m_n)) + E$$

16